



model ROCKET MAN

Combining model design with journalism skills, Bill Simon was at the center of a creative team that made Estes rockets an international phenomenon in the 1960s and '70s BY MARK MAYFIELD

It has been 50 years since Vern and Gleda Estes created the world's largest model rocket company. Both, however, would tell you that a major part of the success of Estes Industries was due to the creative talent of Bill Simon, who joined the company as a young man in 1962 and quickly became vice president.

Simon not only served as editor of the company's popular Model Rocket News, he was also in charge of the R & D department and the company's highly-anticipated annual catalogs.

"Bill was responsible for most of the rockets designed during the 1960s and early '70s, rockets that are now hot collector's items," says Vern Estes. "Bill also did much of the writing for Estes Industries and I depended on him heavily."

Today, Simon works as a yacht designer in Washington State but he has fond memories of those early days in Penrose, Colorado. He recently answered these questions from LAUNCH editor Mark Mayfield.

LAUNCH: As I understand it, you left college to go to work with Vern and Gleda Estes in June 1962. Can you tell us how that came about?

BILL SIMON: During the spring of 1962 I bought an Astron Scout starter kit from a classified ad in the back of *Popular Science*. A few days after the kit came I received a copy of the Model Rocket News along with a survey questionnaire. One of the items in the questionnaire was "What

suggestions do you have for improving the Model Rocket News?"

I sent back a one-page critique, which apparently impressed Vern enough to phone me with a job offer. It sounded like fun, so I accepted, thinking I'd do it for a year or so, save up some money, and go back to school.

After junior college graduation that June I took the train from Portland to Denver, followed by a bus ride to Penrose. I arrived with one suitcase, probably \$5 or \$10 in my billfold, and my portable typewriter.

Vern had already made arrangements for me to rent a cabin, and provided me with the loan of a company vehicle—a 1949 Ford pickup.

Penrose was desolate compared to the lush greenery of the Pacific Northwest, but the hospitality of Vern and Gleda made me quickly feel at home. Also, the job kept me too busy to have any "spare time."

Left, an issue of the Model Rocket News featuring an Estes Saturn V photographed during liftoff of Apollo 11 on July 16, 1969. Opposite: Bill Simon, camera in hand, prepares to photograph an Estes Saturn V indoor launch at halftime of the Bluebonnet Bowl in the Houston Astrodom on December 31, 1969.



Archival photos: Courtesy of the Vern Estes Museum of Model Rocketry.



LAUNCH: Model Rocket News became a must-read for rocketeers, eager for every word they could get on the latest trends, plans, and product announcements. What was your first issue of MRN? And at the height of Estes Industries' popularity, how many copies were you mailing?

SIMON: Vern had started publishing the MRN about two years previously, and the first issue I worked on was Volume 2, Number 2, if I remember correctly. The early issues, prior to my hiring, had been printed on a mimeograph machine, with the stencils cut on a typewriter with a very small type size. (I believe it was Bank Gothic typeface, and it was small. I got a kick out of a note Harry Stine sent Vern complaining about the small type. Harry had carefully lettered it out with a magnifying glass and a Rapidograph pen to make his print even smaller.) When I arrived in Penrose Vern had just leased a 1250W Multilith offset printing press and had purchased a typewriter with a carbon ribbon, so we were able to produce a relatively decent original for the process camera. Bill Roe, the leader of the Colorado Springs chapter of the NAR (National Association of Rocketry), was a printer and made the negatives for that first offset printed edition of the MRN for us.

We probably printed around 10,000 copies of the June 1962 issue. By the peak of our circulation in 1969 we were mailing closer to 250,000 copies.

LAUNCH: You also were in charge of all the company's publications, including the in-house Launch Pad newsletter and the firm's catalogs. How important were these to the success of Estes?

SIMON: Actually, I had little to do with the Launch Pad except for its having been printed in "my" print shop. But otherwise...

Publications did three things for Estes Industries. The catalogs put our products out there for the rocketeers to see and decide whether they wanted to buy them. The MRN and Technical Reports provided an important communication link to educate the customers, both about the basics of the hobby and about safety. Then the kit instructions helped insure that the customers would have a successful experience with the kit.



LAUNCH: Regarding the catalogs, there is an obsession out there among collectors, and some versions of these publications go for a lot of money on eBay. Did you ever envision a day when the catalogs would become so collectible?

SIMON: I never had a clue that anybody outside the company would want to collect the publications except for a personal reference library. The earliest catalog I've managed to hang onto was #631, and I would love to have a sewn catalog from the earliest days, but then on the other hand I don't really need more stuff cluttering up my office at home.

LAUNCH: You also had responsibility over R & D, according to Vern Estes. How did the R & D office work at Estes?

SIMON: When I arrived at Estes Industries, Vern was the R & D Department. I just kind of slid into that responsibility because of the need to have new product to offer in the catalogs and MRN. Gene Street (think Mars Snooper) was hired primarily to illustrate kit instructions, and he and I played off each other to come up with ideas. For example, when I needed another plan to complete an issue of the MRN, I designed the Sky Hook to fill the empty page.

Before long Vern was telling us what type of model he wanted, such as the see-through Phantom for educational use, and we'd pop



something out to fill his request.

As the company grew, Vern had less and less time to spend on modeling, so I assumed more and more of that responsibility. Basically, when Gene and I weren't busy with putting a publication together we would fill our spare time designing and building new models. When Wayne Kellner came along a couple of years later he brought an incredible talent to the department, and our output started to ramp up.

We'd scour every aerospace book and magazine we could lay our glue-encrusted hands on for ideas. That was how Gene got the idea for the Mars Snooper. Then there were what I'd call function-driven designs such as the Camroc Carrier, the Drifter (parachute duration), Apogee (multi-stage), Ranger (cluster), and so forth, all designed to illustrate or emphasize some particular aspect of model rocketry.

We were creating new designs constantly, but as the time for a new catalog or MRN mailing approached we would pick several of the models we liked the best and turn them into kits. Later on, under Damon, we had to trot out a dog and pony show for the execs from Boston, setting forth the rationale for a particular new product, the budget to bring it to market, and the anticipated revenue. The suits would nod sagely, approve some of the stuff, trash some other items, but you could tell that they didn't have a clue.

LAUNCH: You mentioned the Sky Hook. I understand you also designed the Alpha and the SPEV, among others. True?

SIMON: I had kind of hoped the SPEV would be forgotten. The story behind that is that John Hood, our warehouse manager, used the visual system of inventory control: if the bin in his warehouse looked to be near empty, he'd tell George Miller, our purchasing agent, to order more. At some point orders from Euclid, our body tube supplier, were slow coming in, so John, on his next weekly round, would dutifully note that the BT-xx bin was empty and tell George to order more. George in turn would place the purchase order. A few weeks like that and we ended up with a 50-year supply of a couple of items. The "Sur-



This page: Simon in two different eras: Launching an egg loft in the 1960s, at left, and an Estes Space Shuttle at the National Association of Rocketry's annual meet in 1976. Opposite page: Simon clowning around with Norman Avery in Bill's R&D office in 1966, and with Vern Estes in a photo published in the Model Rocket News in 1969.

plus Parts Elimination Vehicle (SPEV)" was purely a way to correct the imbalance, and it was discontinued as soon as it had done its job.

The Alpha went together on my kitchen table one night to get Vern off my back because he had been insisting that we needed a new beginner's model. There were some others like the Drifter, Farside, and Cobra, which I also designed, and many others that were joint efforts. Wayne Kellner created a chart of "who designed what" a few years back, and I find myself referring to it to refresh my memory.

LAUNCH: Vern Estes has said that you and he developed the first multi-stage rocket together, which of course required a booster engine with no delay charge. I have an original Apogee II kit in my office here, dating from 1964. This replaced the earlier Apogee, which as I understand it was the first two-stager at Estes?

SIMON: In fact, we had been producing booster engines for some time, but the reliability of multi-staging left much to be desired. Vern was working on ideas for improving upper stage ignition, but not having a whole lot of success when I suggested to him that he try just taping the two engines together. He tried it, it worked, and with a little experimenting with different types of tape, we came up with the system that we could feel confident about. The original Apogee (K5) actually predates the tape technique. (Another digression here: Note the shape of the fins on the Astron Apogee, Astron Ranger, and later, the Big Bertha, and to a lesser degree, the Streak. That double taper is a Vern Estes signature.)

LAUNCH: I understand the Alpha was the top selling Estes kit of all time. How many kits were sold in the years you were with Estes? And what other kits were best sellers?



SIMON: The Alpha, because of its use in starter kits was the top seller, but Vern's Big Bertha brought in more dollars. I'm sorry to say that I just don't remember sales numbers. If I had to take a stab at it, I'd estimate that by 1967 we were selling around 70,000 kits per year and well in excess of a million kits total in my 15 years at Estes. Our sales channels changed from direct mail order to dealers' sales, and then to distributors and mass marketers, and the number of kits increased at a greater rate than sales dollars. (I kept a copy of a chart showing comparable year-to-year sales dollars but finally decided to toss it into the recycle about six months ago.) I do remember that kits accounted for between one third and half of the company's revenues.

LAUNCH: You mentioned that you designed the Drifter, Farside, and Cobra, among others. Those are certainly iconic Estes rockets. I'm reminded that the Farside-X, for instance, was an extremely popular three-stager with its large payload. And of course the Cobra was a clustered-engine model. How challenging was it to design these kits, and how much testing did you do between the first drawing board sort of design and the actual production of the kits?

SIMON: Our original test procedure was to launch the model in normal trim to verify that it was stable and verify which engines were appropriate for it. Following that we would tape a nose cone weight to the rear of the body tube between the fins to move the balance point aft and launch again. This would be repeated with more weight until we established that it was stable enough to tolerate construction with mis-aligned fins, excessive glue, etc.

Cluster models would be flown with all engines, then with the igniter missing from one engine, then two dead engines, etc. Norm Avery filmed (16mm) a Saturn launch where the model chased me around the parking lot on one engine. It would have made a great "America's Funniest Home Video" entry if it hadn't disappeared sometime in the mid '70s.

Later on we started our testing by swinging the model on a string in various stages of nose-down trim before we went on to actual launches. Of course, some of the test launches were just for the

Above: Vern Estes breaks ground on the firm's new office building in 1968, with Bill Simon and Gene Street at his side. Left: Simon expresses his opinion of a proposed model at his desk in 1967.

enjoyment of flying the model.

Old, beat-up models that were headed for the trash anyway often were launched with a doctored engine so they could go out in a blaze of glory (or at least a *bang* of glory).

First launches were generally performed on models with unfinished surfaces. The fin edges were left square, the nose cone unsanded. We tried to simulate the worst a novice rocketeer could do. We also tested with the parachute restrained from fully opening to simulate a bad packing job. Often we'd tape three or four shroud lines together so we would have half or one third of the parachute deployed. Slim, sleek models might be flown with short delay engines to observe their behavior with premature parachute deployment. Other times big, slow models (Bertha type) were launched with long delay engines to pop the chute well on the way down.

Once we had gone through all this we would fly the model for Vern. This was largely based on the Murphy's Law principle that the worst only happens when the boss is looking on. If Vern liked it, it went into the hopper for pattern, die, decal, instruction, and packaging design.

LAUNCH: All of you in the R & D department must also have been very good modelers. Did you build some of the models featured in the Estes publications? And who was the best modeler at the company?

SIMON: In the mid-60s we created a model building department to provide models for photography, as well as ones to present to VIPs. Prior to that I built my share of models. After Damon axed the model building department and cut the R & D department back I ended up building photography and show models again. However, Mike Dorffler and Wayne Kellner were definitely better modelers than I. Mike can still take a pig and make it look like a beauty queen.

Today, Bill Simon, at right, designs yachts in the Pacific Northwest and still has a penchant for models, too.
PHOTO: MORGAN SIMON

I did build the Saturn V that was used for the Disney "New Mouseketeers" episode in which they launched a rocket. I have pictures of that one.

LAUNCH: What was your favorite Estes rocket?

SIMON: I'd have to say that the Mars Lander was my favorite. But I'd also have to admit that I myself never built one. But then, I've never painted a Van Gogh either.

LAUNCH: Vern told me in the LAUNCH interview (September/October 2006) that at one point, there were 260,000 catalogs being mailed annually. That's an enormous amount. How did you manage that?

SIMON: I think that was probably the peak. By the time that our catalog print runs reached 260,000, we had automated mailing equipment. Starting with catalog #651 they were printed in Denver and delivered to us ready to label and mail. The mail room and shipping crews put in long hours to get the catalogs mailed as quickly as possible, but it still took a couple of weeks to do the job. Gleda Estes, Diana White, and Oakie Six put in heroic efforts to get the catalogs out quickly.

LAUNCH: How fast did the growth seem to you? When you arrived in Penrose, the company was still becoming known. I'm assuming by the time you left, there was a mail order list of a million kids and adults.

SIMON: I think there were fewer than 20 employees when I arrived. The funny thing is that the growth was just a fact of life—it didn't seem that unusual until things slowed down sometime around 1971 or 1972.

LAUNCH: In the February, 1969 issue of Model Rocket News, there was a photo of you and Vern Estes, with Vern holding the company's new 1/100-scale Saturn V model and you holding a Mercury Redstone. How important were scale models to the success at Estes?

SIMON: On a scale of 1 to 10, I'd give scale models about an 8. We couldn't have grown so well without them, but customer communications and our education department under Bob Cannon were at least equally important. Scale models were one aspect of a commitment to providing our rocketeers with models that would capture their imagination and give them something to build that they could be proud of.

LAUNCH: I read somewhere that you actually came up with the body tube designations (BT-50, BT-60, etc.) that, in general, became the hobby's standard way to measure the airframes of these rockets. Is this correct? And if so, how complicated (or simple) was it to come up with this system?



SIMON: The body tube designations were my fault. I really didn't know anything about good practice in part numbering, so I just tried to use numbers that would let us add in-between sizes later on. BT-60, of course, accommodated 3 BT-20 tubes inside, and that was the entire basis for the system. The complexity came a few years later as we added special tube sizes for specific scale models. By that point the system was a huge dinosaur, but we were stuck with it. When we switched to electronic inventory systems we assigned purely numerical part numbers, and the old BT number became just a part of the description.

About those body tubes...

Vern put George Miller, our purchasing agent, on the task of trying to come up with a source of better engine tubes. George sent inquiries to every company listed under *paper tubes* in Thomas Register. One reply, from Euclid Spiral Paper Tube Company included samples of a polykraft/polyglassine construction that struck us immediately as perfect for body tubes. They also sent mylar/polyglassine samples that were eventually used for the Streak.

LAUNCH: You were known as the company's top writer. Did you have a background in journalism? Did writing come naturally? Did you ever go back to college after leaving Estes?



SIMON: Writing was very much a part of my family's "culture" while growing up. Writing flows from reading, and I was a voracious reader, especially when I discovered science fiction in my teens. I had some very good teachers, especially Prof. Hans Spalteholz at Concordia Junior College. I'm afraid I've gotten pretty sloppy in my speech and in my writing as I approach curmudgeon-hood.

I have continued my education throughout my adult life. Rather than following a particular degree path, though, I've taken courses to pick up some particular knowledge or skill I felt I needed, or something I just wanted for the fun of it. As an example, as the Estes mailing list grew, we needed a better way to keep customer records. I took data processing and computer programming courses at Southern Colorado to equip myself to better evaluate our options.

The downside of this approach to education is that those 250-300 credit hours don't give you a nice diploma to hang on the wall. I wouldn't recommend that anyone else take the same path I took.

LAUNCH: You mentioned the changes at Estes after Damon bought the company in 1969. When did you leave the company?

SIMON: I managed to hang in there until 1977, when I left due to family reasons. However, I was getting pretty burned out by that point. Under Damon the spirit went out of the organization, and it was a good time to move on. When I left I was the longest-serving employee, with more years than even Vern. Of course, there are a number of people who have surpassed my record by 20-plus years at this point.

LAUNCH: You now work as a boat/yacht designer in Washington State. I understand you helped design a yacht for Apollo 8 astronaut Bill Anders. Can you give us some details about that?

SIMON: I was more involved in project management than in design on Mr. Anders' yacht, but it did have some interesting aspects. At 57 feet it was our smallest model, and he wanted a number of features normally found on much larger yachts. One such was a hot tub on the flying bridge. However, the feature I got the biggest kick out of was designing and installing underwater viewing ports in the bulbous bow. The bow on that hull is about 3 1/2 feet diameter, and people kept asking "How can he stand to spend time in such a small space?" When you think about it, the Apollo spacecraft probably didn't have as much elbowroom as the Apogee's bulb.

LAUNCH: Your career didn't end at Estes Industries, but how does that experience compare to your later career?

SIMON: First of all, Vern is the standard by which I measure other business owners and executives, and there are very few people of the same caliber in today's business world. Also, the Estes customers were a special group, and it was always enjoyable dealing with them. I can't say the same for a lot of the people I've had to deal with in the years since. My career post-Estes has involved many fun things and many real challenges, but the 1962 to 1967 years are still the "Golden Era" to me.



Estes and Simon pose with two of the company's most memorable models: The Interceptor and Sandhawk.

LAUNCH: What do you think of the model rocketry hobby today? Anything surprise you about it?

SIMON: Shortly after leaving Estes I found myself a single parent, and for several years I didn't have much time for hobbies or anything else outside of work and taking care of the kids. As a result, I'm in a Rip van Winkle condition, and still trying to gain a comprehensive picture of the whole hobby. In looking at the hobby today I'm impressed by the development of high power models, even though they aren't something I'd personally care to build. The collector phenomenon was a real surprise to me. Otherwise, I'm disappointed by the apparent lack of real innovation in low power models.

LAUNCH: Can you comment on your view of the current Estes Industries?

SIMON: I haven't had any direct dealings with the company since Bob Cannon passed away, so I'd hate to pass judgment on people I don't know. I do get the impression that it is now primarily a toy company, and yes, any rocket or airplane that you buy in ready-to-fly form is a TOY.

LAUNCH: What about kids today? I know you have a 13-year-old daughter, who, if she is anything like my 12-year-old daughter, is probably much more into computers, video games, iPods, and DVDs than into rockets. Do you think there will ever be another time when kids get so excited about space and rockets as they were in the 1960s?

SIMON: Apart from the whole Harry Potter thing? That's fired the imaginations of a lot of kids, but in an escapist sort of way. My niece Jenny grew up with model rockets and dreams of entering the space program, and that carried her through to an Astrophysics degree. I really hope that our country will wake up and put some real resources into the manned Mars mission. If and when that happens, you'll see young peoples' imaginations fired up again. From what I hear, that's already happening in China as they ramp up their own space program. +

ESTES DESIGNERS 1961-1980

In the heyday of model rocketry in the 1960s and '70s, designers at Estes Industries in Penrose, Colorado were busy turning out one classic kit after another. Today many of those original kits go for hundreds of dollars at auction.

Here's a list of Estes models sold from 1961 to 1980—and their principal designers. However, it should be noted that many of these designers also collaborated with their colleagues on kits for which they are not credited here. Kit numbers are in parentheses, followed by the year in which they were released. The list was compiled by designer Wayne Kellner.

VERN ESTES

* Designed Mabel, the machine that could manufacture an engine every 5.5 seconds.

- Astron Scout (K-1) 1961
- Astron Space Plane (K-3) 1961
- Astron Ranger (K-6) 1962
- Astron Spaceman (K-9) 1963
- Big Bertha (K-23) 1965

BILL SIMON

- Astron Apogee (K-5) 1962
- Astron Phantom (K-7) 1962
- Astron Cobra (K-10) 1963
- Astron Farside (K-12) 1963
- Astron Farside-X (K-12X) 1963
- Astron Sky Hook (K-8) 1963
- Astron Drifter (K-14) 1965
- Astron Alpha (K-25) 1966
- Astron Avenger (K-38) 1968
- Astron Midget (K-40) 1968
- Astron Scramber (K-37) 1968
- Saturn V Semi-scale (K-39) 1968
- Astron Beta (K-45) 1969
- Astron Birdie (K-44) 1969
- Russian Vostok (1272) 1975
- Antares (1276) 1976
- Firefly (1280) 1976
- Icarus (1277) 1976

BILL SEE

- Astron Starlite (K-32) 1967
- Saturn V (K-36) 1969

GENE STREET

- Astron Sprite (K-15) 1965
- Mars Snooper (K-20) 1965
- Astron Gyroc (K-24) 1966
- Astron Nighthawk (K-34) 1967
- Astron Trident (K-33) 1967
- Saturn 1-B (K-29) 1967
- Astron Constellation (K-35) 1968
- Mercury Redstone (K-41) 1968
- Cherokee-D (K-47) 1969

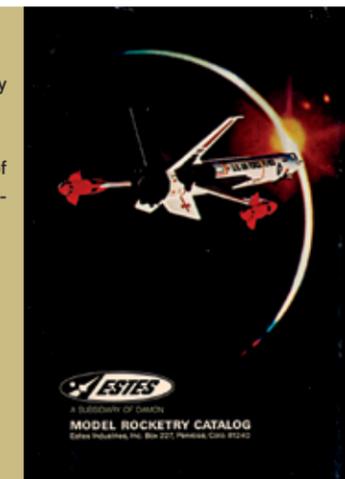
WAYNE KELLNER

- Orbital Transport (K-42) 1968
- Mars Lander (K-43) 1969
- Goblin (K-55) 1970
- Demon (K-58) 1971
- Interceptor (K-50) 1971
- Patriot (MK-3) 1971
- Red Max (MK-1) 1971
- Starship Vega (MK-4) 1971
- Cloud Hopper (0851) 1973
- Galaxy Guppy (0852) 1973
- Missile Toe (0854) 1973
- Sky Shriek (0855) 1973
- Star Snoop (0850) 1973
- Zoom Broom (0853) 1973
- German V-2 (1267) 1974
- Scissor Wing Transport (1265) 1974
- Andromeda (1273) 1975
- Klingon Battle Cruiser (1274) 1975
- Mars Snooper II (1220) 1975
- Nike-X (1270) 1975
- Renegade (1271) 1975
- Starship Enterprise (1275) 1975

- Alien Invader (1281) 1976
- Nike Ajax (1279) 1976
- Photon Disrupter (1282) 1976
- Space Shuttle (1284) 1976
- U.S.S. Atlantis (1283) 1976
- Odyssey (1289) 1977
- Starlab (1288) 1977
- R2-D2 Robot (1301) 1978
- Satellite Interceptor (1296) 1978
- Solar Sailor (1297) 1978
- Gamma (1325) 1979
- Stiletto (1323) 1979
- Black Hole Space Probe (1350) 1980
- Russian SS-1C Scud-B (1340) 1980
- Space Transport America (1338) 1980

MIKE DORFFLER

- Astron Omega (K-52) 1970
- Astron Sprint (K-49) 1970
- Cineroc Movie Camera (K-47) 1970
- Cineroc with Omega Booster (RC-8) 1970
- Saros (K-54) 1970
- Astron Alpha III (K-56) 1971
- Quasar (MK-1) 1971
- Banshee (0703) 1972
- Vampire (0704) 1972
- Shark (1111) 1973
- Yankee 5 (1112) 1973
- LTV Scout (1287) 1977
- Pegasus (0806) 1977
- Black Brant III (1293) 1978
- Cobra-1500 (1294) 1978
- Mean Machine (1295) 1978
- X-Wing Fighter (1298) 1978



- Astrocam 110/Delta II (1327) 1979
- Astrocam 110 Outfit (1410) 1979
- Eclipse (0846) 1979
- Blue Bird Zero (1335) 1980

JOHN SIMMANCE

- Astron Shrike (K-46) 1969
- Sandhawk (K-51) 1971

LARRY RENGER

- Bomarc (MK-5) 1971
- Sky Dart (K-58) 1971
- X-15 Rocket Plane (0705) 1972
- Wolverine (0816) 1973

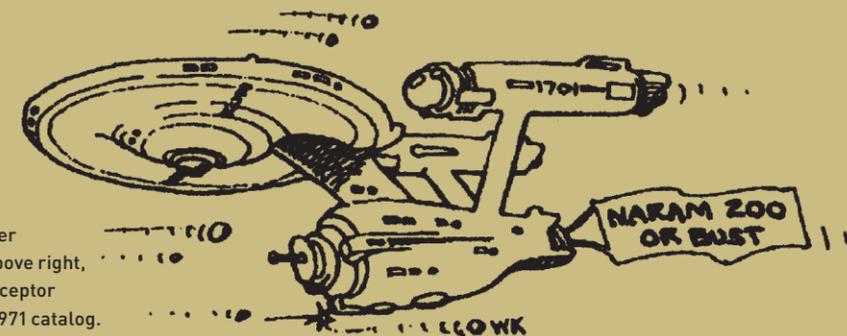
MARK KELLNER

- Teros (1105) 1973
- Marauder (1110) 1973

KEITH NISKERN

- Colonial Viper (1310) 1979
- Maxi X-Wing Fighter (1302) 1979
- T.I.E. Fighter (1299) 1979
- World Federation Star Probe (1341) 1980
- Dragon Ship 7 (1345) 1980

Note: Bill Simon and Wayne Kellner both created the Estes Land Rockets in 1975, including these kits: Screamin' Eagle, Lightning' Bug, Scorcher, and Starfire.



A Wayne Kellner illustration. Above right, Kellner's Interceptor model on the 1971 catalog.